

F00434

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Field Examination / Side Scan

Field No. RU-5-1-97

Registry No. F00434

LOCALITY

State New York

General Locality Lower Bay

Locality Vicinity of Rockaway Inlet

1997

CHIEF OF PARTY

Lieutenant Commander David A. Cole, NOAA

LIBRARY & ARCHIVES

DATE JAN 20 1999

HYDROGRAPHIC TITLE SHEET

F00434
~~FE-434~~INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form,
filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

RU-5-1-97

State New YorkGeneral locality Lower BayLocality Vicinity of Rockaway InletScale 1:5,000 1:10,000 Date of survey 20 June - 02 July 1997Instructions dated 04 March 1996, 27 February 1997 Project No. OPR-C399-RU-97Vessel NOAA Ship RUDE, EDP 9040Chief of party Lieutenant Commander David A. Cole, NOAASurveyed by LCDR DA Cole, LT JM Klay, LT JG Evjen, LT JL Riley, ST MT LathropSoundings taken by: (echo sounder, hand lead, pole) Raytheon DSF-6000N echo sounder, SEABAT 9003Graphic record scaled by JMK, JGEGraphic record checked by JGE, JLR, MTLProtracted by _____ Automated plot by HP DESIGN JET
2500 CP PLOTTERVerification by ATLANTIC HYDROGRAPHIC^{IC} BRANCH PERSONNEL

Soundings in (fathoms, feet, or meters at MLW or MLLW) _____ meters at MLLW

REMARKS:

All times recorded in UTC.The DSF-6000N echosounder was used as the primary sounding instrument.The Edgetech Model 272 towfish was used to acquire 200% side scan coverage.The SEABAT 9003 shallow water multibeam sonar system was employed for iteminvestigations and 100% multibeam coverage.NOTES IN RED IN THE DESCRIPTIVE REPORT WERE MADE
DURING OFFICE PROCESSING.AWOL/SURF ✓ 12/17/98 SJV

NOAA Ship RUDE: January - July 1997 Data Flowchart

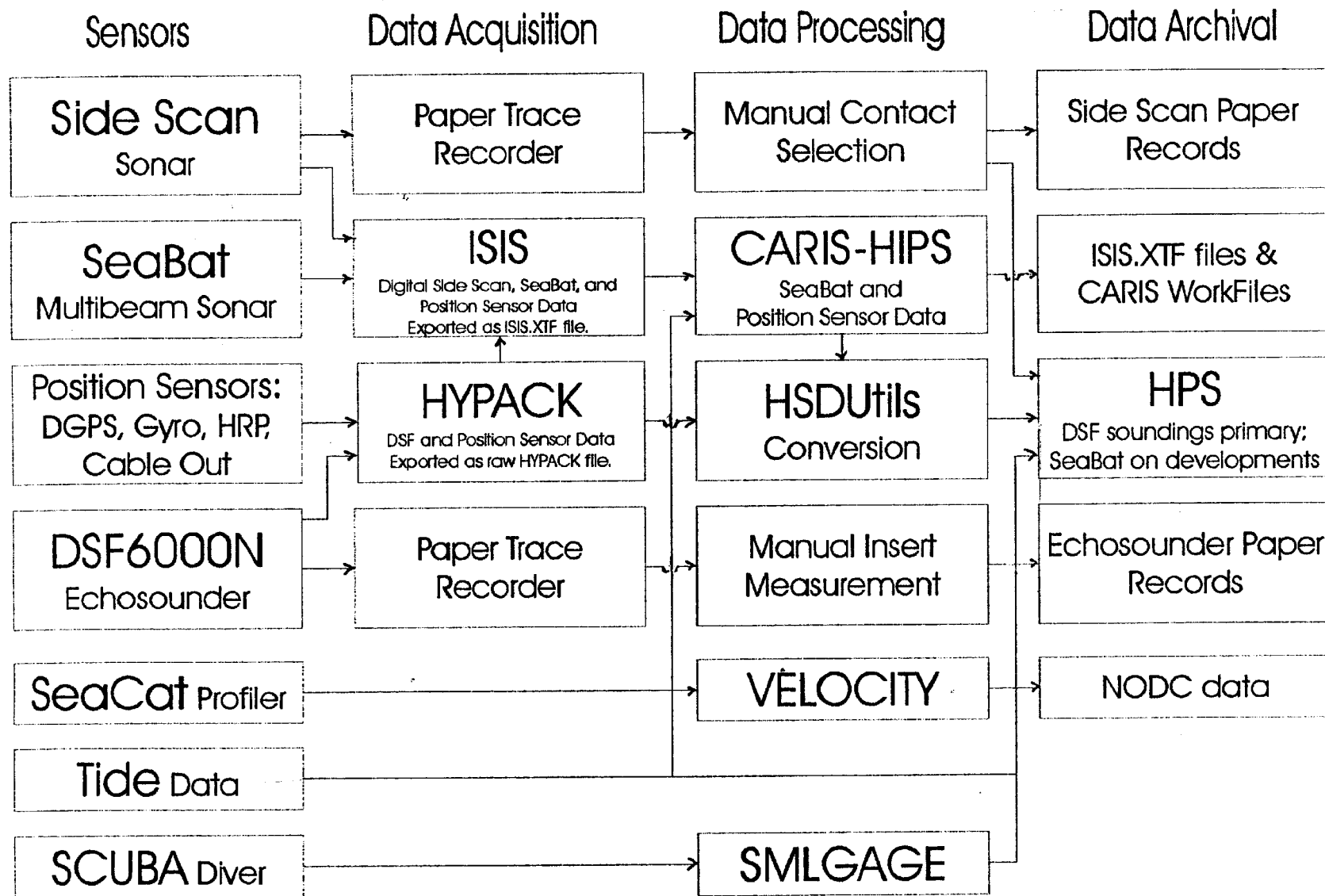
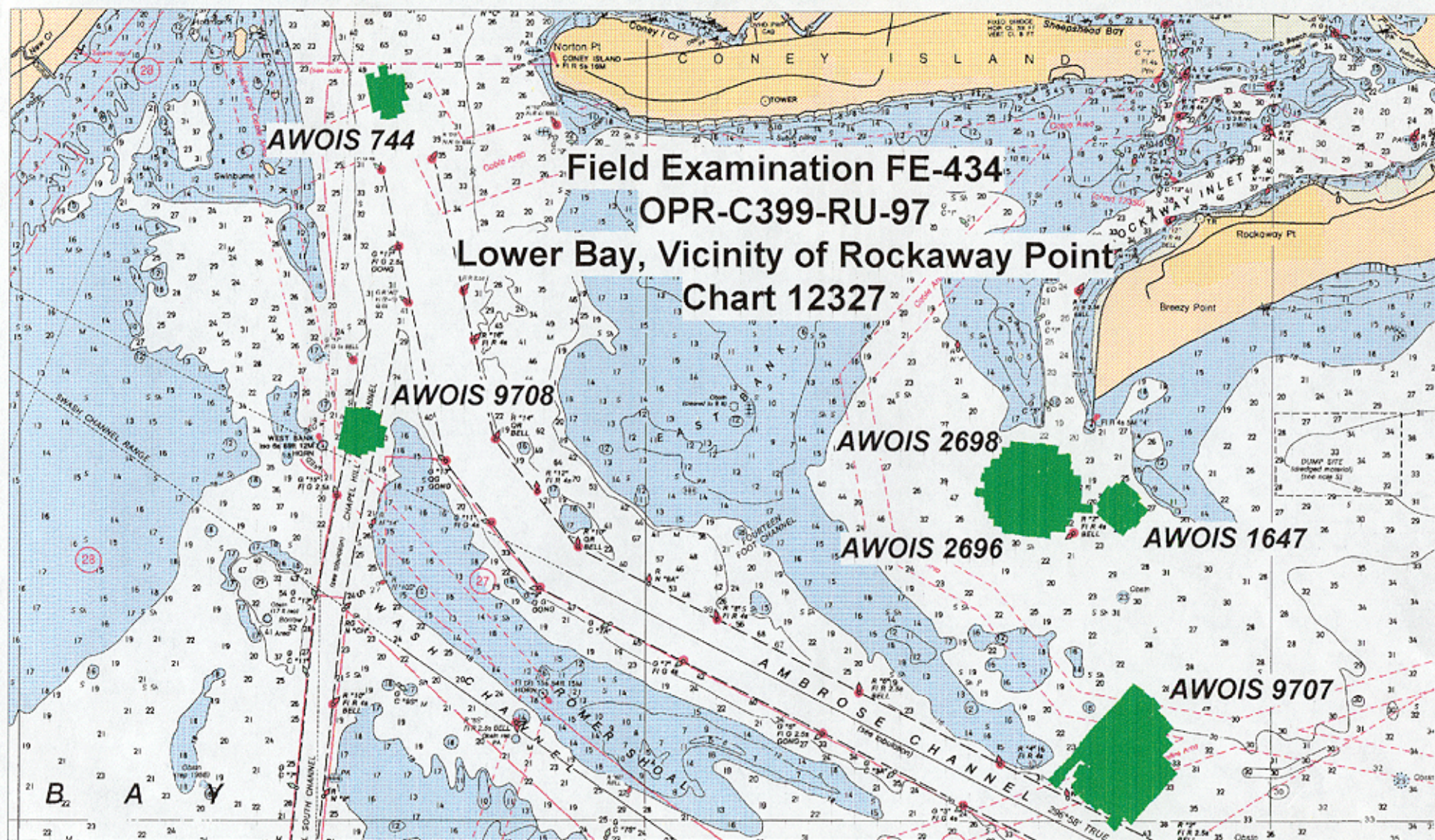


TABLE OF CONTENTS

	<u>Page</u>
A. PROJECT	2
B. AREA SURVEYED	2
C. SURVEY VESSELS	2
D. AUTOMATED DATA ACQUISITION AND PROCESSING	3
E. SONAR EQUIPMENT	5
F. SOUNDING EQUIPMENT	6
G. CORRECTIONS TO SOUNDINGS	7
H. CONTROL STATIONS	9
I. HYDROGRAPHIC POSITION CONTROL	9
J. SHORELINE	10
K. CROSSLINES	11
L. JUNCTIONS	11
M. COMPARISON WITH PRIOR SURVEYS	11
N. ITEM INVESTIGATION REPORTS	12
O. COMPARISON WITH THE CHART	18
P. ADEQUACY OF SURVEY	18
Q. AIDS TO NAVIGATION	18
R. STATISTICS	19
S. MISCELLANEOUS	19
T. RECOMMENDATIONS	19
U. REFERRAL TO REPORTS	20
APPENDICES	
APPROVAL SHEET	
SEPARATES	



A. PROJECT

A.1 This survey was conducted in accordance with Hydrographic Project Instructions OPR-C399-RU, Approaches to New York Harbor, New York.

A.2 The original instructions are dated March 4, 1996.

A.3 There has been one change to the original instructions, dated February 27, 1997.

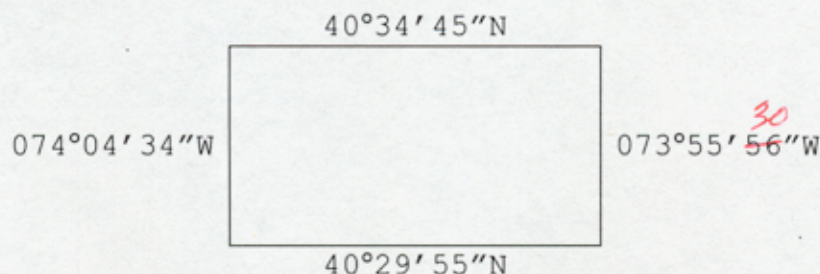
A.4 This survey has no designated sheet letter.

A.5 This survey responds to requests from the U.S. Coast Guard, Port Authority of New York and New Jersey, and the United Pilots Benevolent Associations of New York and New Jersey (Sandy Hook Pilots). This survey was requested due to the large volume of deep draft (42-foot) traffic using the approaches to New York Harbor. The area was last surveyed by the Coast and Geodetic Survey between 1950 and the late 1980's.

B. AREA SURVEYED

B.1 This survey covers six AWOIS items in Lower Bay, in the vicinity of Rockaway Inlet.

B.2 The survey is comprised of one sheet with the following approximate boundaries:



B.3 Data acquisition for this survey began on June 20, 1997 (DN 171) and ended on July 2, 1997 (DN 183).

C. SURVEY VESSELS

C.1 All hydrography, side-scan and **SeaBat** investigations were conducted from NOAA Ship RUDE, S-590, EDP# 9040.

C.2 The transducer for the multibeam sonar was deployed on a pivoting arm mounted on the port side, approximately amidships. The arm was rotated into the operating position only during times of data acquisition.

D. AUTOMATED DATA ACQUISITION AND PROCESSING *SEE ALSO THE EIA REPORT*

D.1 Coastal Oceanographics' **HYPACK for Windows** (Version 6.4B) was used for data acquisition on this survey. The following Hydrographic Processing System (HPS) software versions were used for data processing:

ABSTRACT.PRG	19970314	GRIDS.PRG	19970218	READTIDE.PRG	19970218
ACADX.PRG	19970212	GRIDX.EXE	19950512	REAPPLY.PRG	19970218
ADDFLD.PRG	19970212	GROUDDPS.EXE	19960520	SCARSX.PRG	19970218
APPTIDE.PRG	19970331	HEADCHK.EXE	19940614	SEGMENT.FMT	19940713
ASCTIDE.BAK	19970401	HPSLIB.BAK	19970211	SNDXTRAC.PRG	19970218
ASCTIDE.PRG	19970401	HPSLIB.PRG	19970321	SND LIST.PRG	19970218
BLK EDIT.BAK	19970129	IDF2CAD.PRG	19970218	SYS MNU.BAK	19970127
BLK EDIT.PRG	19970212	IDF MAKR.PRG	19970218	SYS MNU.PRG	19970325
BROWSER.PRG	19970218	KILL.EXE	19950209	TARGX.PRG	19970218
BROW DAT.PRG	19970218	LIST DAT.BAK	19960624	TBL MNU.BAK	19970307
CC EXCEP.PRG	19970218	LIST DAT.PRG	19970318	TBL MNU.PRG	19970307
CONTACT.FMT	19950614	LIST MNU.PRG	19970218	TIDECHEK.PRG	19970218
CONTACT2.FMT	19950614	LOADRAY.PRG	19970205	TIDED LB.PRG	19970326
CONTMAPX.PRG	19970218	LPICK.PRG	19970314	TIDE FX.PRG	19970326
CONT FND.PRG	19970414	MAINMENU.BAK	19970210	TIDE MNU.PRG	19970218
CONT GRP.PRG	19970218	MAINMENU.PRG	19970210	UTIL MNU.PRG	19970218
CONT MNU.BAK	19970218	MAKEPRJ2.PRG	19951205	UTM2GEO.PRG	19970218
CONT MNU.PRG	19970314	MAKETBLS.PRG	19970218	UTM GEO.PRG	19970218
CONT PUR.PRG	19970218	MAKE PRJ.BAK	19970218	XYZ.PRG	19960531
CONV DAT.PRG	19970317	MAKE PRJ.PRG	19970225	ZONE MNU.PRG	19970326
CPTTIDES.PRG	19970326	MANU DAT.FMT	19950313	ZOOMEDIT.EXE	19970305
CPTZONES.PRG	19950326	MANU DAT.PRG	19970218		
CSTAT.FMT	19940712	MAPINFOX.PRG	19970218		
DATA.FMT	19950629	MERGE.PRG	19970212		
DATA GET.BAK	19970212	NEWNAME.PRG	19970218		
DATA GET.PRG	19970212	OFFSET.FMT	19940720		
DET ABS.BAK	19970218	PC2HARIS.PRG	19970218		
DET ABS.PRG	19970325	PICKER.OLD	19941027		
DIAG MNU.PRG	19970218	PICKER.PRG	19970212		
DPASGAGE.PRG	19950326	PLOTFR.PRG	19970325		
DPAS MNU.PRG	19970326	PLOTINIT.OLD	19970218		
DP PRINT.PRG	19970218	PLOTINIT.PRG	19970218		
EDITALL.PRG	19970218	PLOTTER.FMT	19940506		
EDITDATA.PRG	19970318	PLOT CNT.PRG	19970218		
EDIT MNU.PRG	19970218	PLOT DP.PRG	19970218		
EDSTAT.PRG	19970317	PLOT LL.PRG	19970218		
FEDIT.PRG	19970218	PLOT MNU.BAK	19970218		
FIELDMNU.BAK	19960925	PLOT MNU.PRG	19970321		
FIELDMNU.PRG	19970328	PLOT MTM.PRG	19970218		
FILE MGR.PRG	19970218	PLOT SND.BAK	19970218		
FIND DP.PRG	19970218	PLOT SND.PRG	19970321		
FIX.PRG	19970218	PLOT SWA.PRG	19970318		
FLDCNLST.PRG	19970313	PLOT TRK.PRG	19970321		
FRAME.PRG	19970218	PRETIDE.FMT	19940506		
FTRLIST.PRG	19970218	PROJECTS.FMT	19960911		
GAGE MNU.PRG	19970326	QUIKEDIT.BAK	19970218		
GEO2UTM.PRG	19970218	QUIKEDIT.PRG	19970316		
GEO UTM.PRG	19970218	READDPAS.BAK	19970207		
GETVERS.EXE	19940613	READDPAS.PRG	19970326		
GET PROJ.BAK	19970303	README.PRG	19970207		
GET PROJ.PRG	19970303	READNAUT.BAK	19970305		
GRAFEDIT.EXE	19970305	READNAUT.PRG	19970328		
GRAFEDIT.OLD	19970129	READNAUT.TXT	19970328		

D.2 The **SEABIRD** SBE-19 sound velocity profile unit was utilized with **SEASOFT 3.3M** and **SEACAT 3.00** software for the **DSF-6000N** and **SeaBat** data. The program **VELOCITY** (Version 3.00) was used to process the collected data and calculate velocity corrections for the **DSF-6000N** data only.

D.3 Triton Corporation's **ISIS** software (Version 2.35) was used to collect **SeaBat** multibeam and digital side scan sonar data. **SeaBat** data were processed on the **CARIS-HIPS** system (Version 4.2.7), and depths were generated for each **SeaBat** investigation and later entered into HPS via the **HSDUtils Convert** program.

The conversion software to translate **HYPACK** (Version 6.4B) data into HPS-compatible format was supplied by NOAA's Hydrographic Surveys Division (HSD).

Final plots were created in **MapInfo**, a PC-based GIS package, with assistance from HPS-MI **MapInfo** tools supplied by HSD. These tools produced depth, track and swath plots from HPS data, and allowed plotting on a HP750C DesignJet 36" plotter. Data could also be overlaid on a raster image of the applicable chart.

E. SONAR EQUIPMENT

E.1 The RUDE conducted all side scan sonar operations using an **Edgetech** Model 260-TH image-corrected side scan sonar recorder and a 100 kHz Model 272 towfish. Additionally, all side scan sonar data were recorded digitally using the **Triton ISIS** software and archived in the Extended Triton Format (XTF) files.

E.2 The towfish was configured with a 20° beam depression, which is the normal setting and yields the optimum beam correction.

E.3 The 100 kHz frequency was used throughout the survey.

E.4 a. The 50-meter range scale was used at a line spacing of 80 meters to obtain complete area coverage and provide optimal contact resolution. Data acquired with an EPE of 15 or greater were either rejected or smoothed during post-processing, so the maximum line spacing was never exceeded.

b. Confidence checks were obtained whenever features such as rocks or sand waves were encountered. These features were annotated on the sonar grams on a daily basis.

c. Two hundred percent side scan coverage was completed for all AWOIS items except #9707. Holiday coverage was run to fill in any gaps. All coverage was checked with on-screen zoomable coverage displays in **MapInfo** to ensure proper overlap between lines.

d. Side scan lines with degraded data returns were rejected and rerun as holidays to ensure 200% side scan coverage throughout the survey.

e. The towfish was deployed exclusively from the stern.

E.5 Sonar records were monitored on-line and reviewed by two persons during processing to identify contacts. Contact offsets and shadow heights were measured on sonar paper records, checked, and entered into the HPS Contact Table to compute contact heights and positions.

E.6 All side scan contacts with an HPS-computed height of one meter or greater were deemed significant and subsequently investigated.

F. SOUNDING EQUIPMENT

F.1 The primary sounding instrument for this survey was a **Raytheon Model 6000N** Digital Survey Echosounder (DSF-6000N, s/n A107). Both high (100 kHz) and low (24 kHz) frequency sounding data were recorded during data acquisition. Only high frequency DSF soundings were selected and examined. Using **HYPACK**, high frequency DSF soundings were automatically selected at the beginning, end, and every 50 meters along survey lines. Echograms were monitored on-line and reviewed by two persons during processing to verify selected soundings and identify additional sounding inserts. Insert offsets and depths were measured on the echograms, checked, and entered into HPS.

Supplemental soundings on item developments were acquired with a **Reson SeaBat 9003** shallow-water multibeam sonar system. Prior to beginning **SeaBat** data acquisition on this survey, the RUDE **CARIS** Vessel Configuration File was updated to define the physical relationship between the various components that comprise the system, including the **SeaBat** transducer head, **TSS** motion sensor, and GPS antenna. In addition, this offset file contains heave, roll and pitch biases determined during a "Patch Test" conducted in Chesapeake Bay, VA on April 2, 1997. A copy of the Vessel Configuration File is contained in **Separate III.*

** FILED WITH THE ORIGINAL FIELD RECORDS*

The **SeaBat** sonar employs a Mills Cross transducer configuration. A can-shaped projector on the forward end of the sensor emits a 455 kHz fan-shaped sonar pulse. Return echoes are received through 40 independent beams, each sampling a 3° crosstrack by 1.5° alongtrack footprint. Measurements are repeated 13 times per second, forming a continuous swath of multibeam coverage along the vessel trackline. The effective swath width is approximately 2.5 times the water depth.

SeaBat depth data are displayed during acquisition and reviewed with **CARIS-HIPS** Data Cleaning programs. Depth fliers were identified and manually flagged as "rejected". Vessel positioning and attitude data from DGPS, gyro, heave, roll and pitch sensors were similarly displayed and manually cleaned. Additionally, instantaneous speed as computed from the positioning data was checked for jumps. For this survey, the outer three beams on each side of the swath (beam numbers 1, 2, 3, 38, 39 and 40) were not used, reducing the effective swath width to 102° (3° x 34 beams). Proper overlap between multibeam sonar coverage lines was verified in **MapInfo** using a swath width of 100°.

After review and cleaning, the depth, position, and attitude data were merged with sound velocity, tide and dynamic draft correctors to compute the true depth and position of each sonar footprint. These processed data were excessed by selecting shoal soundings at a density of 3 meters x 3 meters and converted to HPS for further processing. In the interest of efficiency, **SeaBat** developments with no features were not processed. Processed **SeaBat** soundings were then imported into HPS through HSD Utilities. Note that excessing was accomplished using predicted tide values. Shoal soundings selected through **CARIS** may be incorrect due to anomalous predicted tides. Large differences between predicted and verified tides may justify reapplication of tides to the entire **CARIS-HIPS** dataset to ensure correct selection of least depths for transfer to HPS.

F.2 No dives were conducted on this survey.

F.3 There were no faults in sounding equipment that affected the accuracy or quality of the data.

G. CORRECTIONS TO SOUNDINGS

G.1 a. The velocity of sound through water was measured using a **Sea-Bird** SBE 19 Seacat Profiler (s/n 1251) calibrated on December 27, 1996. Velocity casts were conducted daily in accordance with the Interim Guidance of April 8, 1997. **Seacat**

Data Quality Assurance Tests were conducted after each respective velocity cast to ensure that the unit was operating within tolerance.

Sound velocity data applied to DSF data were processed using program **VELOCITY**. Computed velocity correctors were entered into the HPS sound velocity tables and re-applied during post-processing to both high and low frequency soundings. **SeaBat** sound velocity and refraction correctors were generated through the **REFRACT** algorithm within **CARIS-HIPS**. The following velocity casts supplied correctors for this survey:

Cast Number	DN	HPS Table	Applied to Days
60	171	60	171
61	177	61	177-178
62	180	62	180
63	181	63	181
64	182	64	182-183

b. A DSF-leadline direct comparison was conducted on June 5, 1997 (DN 156). Leadline and DSF soundings compared satisfactorily. See*Separate IV for data records. DSF and SeaBat soundings also compared satisfactorily.

c. Sensor offsets and transducer static drafts were measured during the December 1996 dry-dock period. Sensor offsets were stored in HPS Offset Tables and the **CARIS-HIPS** Vessel Configuration File for use in data processing. See*Separate IV for data records.

d. Dynamic draft was measured on February 20, 1997. Dynamic draft correctors were stored in HPS Offset Tables and the **CARIS-HIPS** Vessel Configuration File for use in data processing. See*Separate IV for data records.

e. Heave, pitch and roll data were acquired with a **TSS Model 335B Motion Sensor** (s/n 542). A preseason checkout of the sensor was successfully conducted in accordance with the TSS-335B Operating Manual. Heave corrections were applied to DSF data in HPS. Heave, pitch and roll data were applied to **SeaBat** data through **CARIS-HIPS**.

**FILED WITH THE ORIGINAL FIELD RECORDS*

f. Vessel heading data were acquired with a **Sperry Mark 32** Gyrocompass. Heading data were used to compute **SeaBat** transducer position and orientation.

g. **SeaBat** data were adjusted using biases as determined during a patch test completed on April 2, 1997. See the Vessel Configuration File in **Separate IV* for data records.

G.2 The RUDE employed no unusual or unique methods or instruments to correct echo soundings.

G.3 Tide zoning for this project is consistent with the Project Instructions. Tide and range correctors were direct to the unverified observed tides at Sandy Hook, NJ (Station 853-1680). Tide correctors were computed in HPS and applied to DSF and **SeaBat** data.

G.4 No dives were conducted on this survey.

G.5 The DSF transducer position offset was not corrected. See section I.6e. *APPLIED DURING OFFICE PROCESSING*

G.6 The vertical reference surface for this survey is Mean Lower Low Water.

A request for smooth tides was mailed on August 3, 1997. These data will replace the unverified tide data during verification by N/CS33.

In HPS, only tide reapplication processing is permissible on multibeam data. If necessary, all other vertical correctors and horizontal offsets should be reapplied to multibeam data using the CARIS-HIPS software. However, if tidal reapplication is necessary, it should be done to the entire CARIS multibeam workfile, to ensure the correct least depths are identified for transfer to HPS.

APPROVED TIDES AND ZONES WERE APPLIED DUE TO ALL HPS DATA DURING OFFICE PROCESSING

H. CONTROL STATIONS *SEE ALSO THE EVALUATION REPORT*

The horizontal datum for this survey is the North American Datum of 1983 (NAD 83). No horizontal control stations were used or established for this survey.

I. HYDROGRAPHIC POSITION CONTROL

I.1 This survey was conducted exclusively using the Global Positioning System (GPS) corrected by the U.S. Coast Guard

Differential GPS reference station network. Differential correctors were supplied from USCG radiobeacon transmitters, precluding the need for shore-based horizontal control stations.

I.2 Accuracy requirements were met as specified by the Hydrographic Manual, section 1.3 and 3.1, and the Field Procedures Manual, section 3.4.

I.3 Differential GPS Equipment:

<u>Unit A</u>	<u>Unit B</u>
Ashtech GPS Sensor	Ashtech GPS Sensor
s/n 700417B1083	s/n 700417B1003
Firmware Version 1E89D-P	Firmware Version 1E89D-P
Magnavox MX50R	Magnavox MX50R
DGPS Receiver s/n 078	DGPS Receiver s/n 160

Correctors were received from the Montauk, NY and Sandy Hook, NJ radiobeacons for the entire survey.

I.4 Daily performance checks were conducted using the Shipboard Data Integrity Monitor program ("SHIPDIM", Version 2.1). A 12-hour monitor of the USCG DGPS beacons was conducted, also using SHIPDIM. See *Separate III for data records.

I.5 The application of calibration data to the raw positioning data was not required, since DGPS was the primary positioning system.

I.6a. There were no unusual methods used to operate or calibrate electronic positioning equipment.

b. There were no positioning equipment malfunctions.

c. There were no unusual atmospheric conditions noted which might have affected data quality.

d. The maximum allowed HDOP value of 2.50 was rarely exceeded. Survey positions were reviewed with on-screen zoomable trackplots using MapInfo.

e. Offsets for the GPS antenna were applied from the CARIS-HIPS Vessel Configuration File to compute the position of the SeaBat transducer. See *Separate III for data records.

Horizontal positions of the DSF vertical beam echosounding data were not corrected for GPS antenna offsets during field processing. The horizontal inverse distance between the DSF transducer and the GPS antenna is approximately 2.3 meters.

** FILED WITH THE ORIGINAL FIELD RECORDS*

f. A-frame position (tow point), cable length, towfish height, and depth of water were applied to ship's navigation data in HPS to compute the side scan towfish position.

J. SHORELINE

No shoreline is contained within the boundaries of this survey.

K. CROSSLINES

Multibeam development lines run perpendicular to mainscheme lines provided cross-comparisons with the mainscheme data. These lines compared favorably, with average differences of about 0.5 feet.

L. JUNCTIONS *SEE ALSO THE EVALUATION REPORT*

This survey does not junction with any contemporary surveys.

M. COMPARISON WITH PRIOR SURVEYS *SEE ALSO THE EVALUATION REPORT*

A comparison with prior surveys will be performed by the Atlantic Hydrographic Branch as part of the office verification process.

N. ITEM INVESTIGATION REPORTS

AWOIS No. 744

Item Description: 47 ft. (Unknown) cleared by wire drag

Source: H9820/79-OPR-B139-WH-79

AWOIS Position: 40°34'24.97"N, 074°02'03.90"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12300, 12402, 12327

Investigation

Date (s)/DN (s): June 26-27, 1997 / DN 177-178

Position Numbers: 1109-1224

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 70 meters. Two debris piles were detected and developed with **SeaBat**. The least depth was found at contact 1160.1S.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
DSF	15.41	50.49	1207.1	40°34'17.734"N	074°02'00.989"W
SeaBat	15.53	51.50	40066	40°34'17.922"N	074°02'01.313"W

15.4 51 1219.1 40°34'22.991"N 74°02'06.681"W

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The blue tint and charted obstruction at 47 feet should be removed.

CONCUR w/ CLARIFICATION

COMPILATION NOTES

DELETE (47)

ADD (49) Obstm AT 40°34'17.659"N 74°02'01.106"W

ADD (51) Obstm AT 40°34'22.991"N 74°02'06.681"W

Item Description: 20 ft. Obstruction

Source: OPR-B645-RU/HE-80

AWOIS Position: 40°31'55.58"N, 073°56'11.09"W

Required Investigation: Full, 200% SSS, 200m radius

Charts Affected: 12326, 12327, 12300, 12350

Investigation

Date (s)/DN (s): June 30, July 1, 1997 / DN 181-182

Position Numbers: 1259-1370, 1898-1901, 1931-1981, 2196-2210

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 70 meters. Six significant contacts were detected and developed with **SeaBat**. During the investigation of contact 1296.0s, two large manmade objects were found sitting about 40 meters apart in about 27 feet of water. The southernmost contact appears to be a 14 meter-long part of a wreck with a least depth of 21 feet. Due to time constraints, no dive was conducted.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N) .391	Longitude (W) 10.953
DSF	6.64	21	2208.1	40°31'55.466"N	073°56'11.013"W
SeaBat	6.53	21.20	44005	40°31'55.521"N	073°56'11.072"W *

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted "subm obstn (20 ft rep 1980)" should be removed and replaced by a 21-foot obstruction at 40°31'55.521"N, 073°56'11.072"W.

***** CONCUR *****

COMPILATION NOTES

DELETE Subm obstn PA 20 ft rep 1980

* ADD (20) obstn

(SEE CHARTS 12350, 12327)

AWOIS No. 2696

Item Description: 20 ft. Obstruction cleared by wire drag

Source: FE232/80-OPR-B645-RU/HE-80

AWOIS Position: 40°31'55.34"N, 073°56'54.48"W

Required Investigation: Full, 200% SSS, 100m radius

Charts Affected: 12326, 12300, 12350, 12402, 12327

Investigation

Date (s)/DN (s): July 1, 1997 / DN 182

Position Numbers: 1902-1930

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 70 meters. One significant contact was found just to the west of the AWOIS circle and developed with **SeaBat**.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N)	Longitude (W)
DSF	7.65	25.24	1999.1	40°31'55.889"N	073°57'01.095"W
SeaBat	6.76	22	41894	40°31'55.701"N	073°57'01.129"W

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The blue tint and charted obstruction at 20 feet should be removed. A 22-foot ^{depth} depth, believed to be the AWOIS item, should be placed at 40°31'55.701"N, 073°57'01.129"W.

***** CONCERN *****

COMPILATION NOTES

DELETE (20) Obstr

* ADD (22) Obstr

Item Description: 22 ft. (Unknown)

Source: FE232/80WD-OPR-B645-RU/HE-80

AWOIS Position: 40°32'01.58"N, 073°56'54.89"

Required Investigation: Full, 200% SSS, 500m radius

Charts Affected: 12326, 12300, 12350, 12402, 12327

Investigation

Date (s)/DN (s): June 30, July 1, 1997 / DN 181-182

Position Numbers: 1371-1897, 1902-1930, 1982-2195

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 70 meters. Nineteen significant contacts were detected and developed with **SeaBat**. During the investigation of contact 1889.2p, a manmade object was found with a least depth of ~~16~~¹⁵ feet sitting in about 26 feet of water.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N) .374	Longitude (W) .299
DSF	5.6	18	2046.1	40°32'15.403"W N	073°56'48.392"W
SeaBat*	4.8 ⁷	16 ¹⁵	41031	40°32'15.578"W N	073°56'48.379"W *

* Reported as Danger to Navigation, See Appendix I.
-----Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The charted ~~obstruction~~^{SUNKEN WRECK} cleared to 22 feet ~~ED~~ should be removed and replaced by a ~~16~~¹⁵-foot obstruction at 40°32'15.578"W, 073°56'48.379"W. CONCUR

COMPILATION NOTES

DELETE (22) Wreck ED (Charts 12350, 12402)
 DELETE (16) ED (CLEARED TO 22 FT) (Chart 12327)
 * REVISE (16) obstn to (15) obstn (Charts 12327, 12402)
 * ADD (15) obstn (Chart 12350)

AWOIS No. 9707

Item Description: Bronx Queen (7 ft.)

Source: LMN49/89

AWOIS Position: 40°30'25.00"N, 073°56'32.00"W

Required Investigation: Full, 200% SSS, 1000m radius

Charts Affected: 12326, 12300, 12402, 12327, 12401

Investigation

Date (s)/DN (s): July 2, 1997 / DN 183

Position Numbers: 2211-2497

Positioned Determined by: DGPS

Investigation Summary: Investigated using 100% side scan sonar at a line spacing of 70 meters. The western portion of the AWOIS circle was not surveyed due to the proximity of shoals. Seven significant contacts were detected and developed with SeaBat. A least depth of 28 feet was found at position 44079.

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N) 42.005	Longitude (W) .447
DSF	8.98	29	2436.1	40°30' 41.986" WN	073°55' 59.545" W
SeaBat	8.75	28	44079	40°30' 42.060" WN	073°55' 59.694" W

Charting Recommendation

This AWOIS investigation is incomplete. However, the hydrographer recommends charting the representative depths from the present survey. Further investigation could be accomplished from a smaller platform. See the Supplemental Correspondence in Appendix VI for more information on the wreck.

CONCUR

COMPILATION NOTES

RETAIN (7 ft rep) PA

Item Description: 30 ft. Obstruction

Source: CL1219/94

AWOIS Position: 40°32'22.00"N, 074°02'17.00"W

Required Investigation: Full, 200% SSS, 250m radius

Charts Affected: 12326, 12300, 12402, 12327

Investigation

Date (s)/DN (s): June 20, 29, 1997 / DN 171, 180

Position Numbers: 1000-1108, 1225-1258

Positioned Determined by: DGPS

Investigation Summary: Investigated using 200% side scan sonar at a line spacing of 70 meters. Six significant contacts were detected and developed with **SeaBat**. The least depth of 22 feet lies 60 meters outside Chapel Hill Channel and was found during the investigation of contact 1038.1S. A depth of 27 feet was found inside the channel during the investigation of contact 1053.7S. The western 60 meters of the AWOIS circle were not surveyed due to the proximity of the West Bank Lighthouse.

WEST OF CHANNEL

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N) <i>26.971</i>	Longitude (W) <i>.138</i>
DSF	7.2	23	1253.1	40°32'27.000"W <i>N</i>	074°02'23.044"W
SeaBat	6.8	22	40796	40°32'27.029"W <i>N</i>	074°02'22.828"W

IN CHANNEL

Method	Depth (m)	Depth (ft)	Fix #	Latitude (N) <i>.901</i>	Longitude (W) <i>.148</i>
DSF	8.87	28	1246.01	40°32'23.966"N	074°02'11.093"W
SeaBat	8.32	27	40665	40°32'24.323"N	074°02'11.471"W

8.3 27 40605 40°32'16.486"N 74°02'13.337"W

Charting Recommendation

Hydrographer recommends charting the representative depths from the present survey. The blue tint and charted obstruction at 30 feet should be removed.* Further processing of the existing SeaBat data for contacts 1015.3S and 1031.1P may be prudent.

* CONCOR w/ Clarification

SEE ALSO THE EVALUATION REPORT N.1

NOAA Ship RUDE

Descriptive Report

FE-434

DELETE 30: Obstrn Rks REP 1994 (Chart 12402)
 30: Rk rep (Chart 12327)

These contacts were identified in post-processing as potential developments.

COMPILATION NOTES

O. COMPARISON WITH THE CHART

SEE ALSO THE ETA REPORT

O.1 Four charts are affected by this survey:

Chart 12300
37th Ed. 11 January 1997
Scale: 1:400,000

Chart 12326
44th Ed. 1 February 1997
Scale: 1:80,000

Chart 12327
91st Ed. 19 April 1997
Scale: 1:40,000

Chart 12350
55th Ed. 24 June 1995
Scale: 1:20,000

O.2 One Danger to Navigation report was submitted for this survey. Two separate items were reported as Dangers to Navigation. Reported depths were calculated with predicted tides. See appendix I for reports. APPENDED TO THIS REPORT

O.3a. The overall correlation between charted soundings and survey depths is excellent, with average differences of approximately one to two feet in most areas. Soundings that differed significantly are discussed in Section N. The survey was compared to charts 12327 and 12350 only.

b. No deepening trends were found in the survey area.

P. ADEQUACY OF SURVEY

* SEE ALSO THE ETA REPORT

This survey is complete and fully adequate to supersede prior survey data in common areas.

Q. AIDS TO NAVIGATION

No detached positions were taken on floating aids to navigation within the limits of this survey.

R. STATISTICS

R.1 a.	Number of Positions	5902
b.	Lineal Nautical Miles of Sounding Lines	34.4
	Nautical Miles of Survey With the Use of Side Scan Sonar	27.6
	Nautical Miles of Survey Without the Use of Side Scan Sonar	6.8
R.2 a.	Square Nautical Miles of Hydrography per 100% of Coverage	2.6
b.	Days of Production	7
c.	Detached Positions0
d.	Bottom Samples	0
e.	Tide Stations	1
g.	Velocity Casts	5
j.	SeaBat Item Investigations	37

S. MISCELLANEOUS SEE ALSO THE EVALUATION REPORT

- S.1 a. No evidence of shoaling was found during this survey.
- b. No evidence of anomalous tides or tidal current conditions was found during this survey.
- S.2 No bottom samples were obtained during this survey.

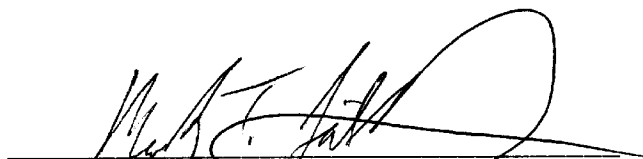
T. RECOMMENDATIONS

- T.1 No additional field work is required on all AWOIS items except #9707. *CONCUR*
- T.2 The hydrographer is aware of no construction or dredging that will affect results of this survey.
- T.3 Further investigation of the survey area is recommended on AWOIS 9707. It is recommended that a smaller platform be tasked with this investigation. *CONCUR*

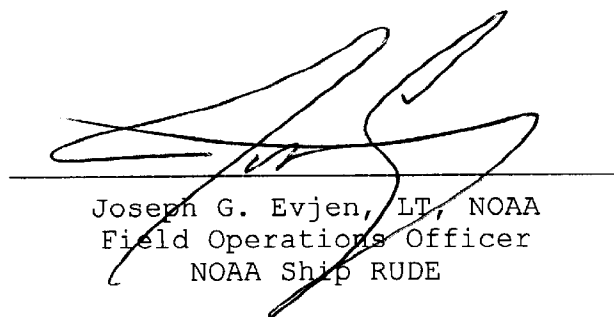
U. REFERRAL TO REPORTS

<u>Title</u>	<u>Transmittal Information</u>
Landmarks and Nonfloating Aids to Navigation Report New York Harbor	Atlantic Hydrographic Branch N/CG244 Atlantic Marine Center

This report and the accompanying field sheets are respectfully submitted.

A handwritten signature in dark ink, appearing to read 'Mark T. Lathrop', written over a horizontal line.

Mark T. Lathrop
Survey Technician
NOAA Ship RUDE

A handwritten signature in dark ink, appearing to read 'Joe Evjen', written over a horizontal line.

Joseph G. Evjen, LT, NOAA
Field Operations Officer
NOAA Ship RUDE



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship RUDE S-590
439 W. York Street
Norfolk, VA 23510-1114

September 30, 1997

Commander
First Coast Guard District
Aids To Navigation Office
408 Atlantic Avenue
Boston, Massachusetts 02110-3350

REPORT OF DANGER TO NAVIGATION

Dear Sir:

The NOAA Ship RUDE has recently completed a hydrographic survey of the approaches to New York Harbor:

Hydrographic Survey Registry No.... FE-434
State..... New York
General Locality..... Lower Bay
Sublocality..... Vicinity of Rockaway Inlet
Project Number..... OPR-C399-RU-97

During the course of multibeam sonar operations, two obstructions were discovered to have least depths shoaler than the depths currently shown on charts of the area. This new depth information merits immediate publication in the Local Notice to Mariners. The updated depths affect the following charts:

Chart 12327, New York Harbor, 91 ed, 19 April 1997
Chart 12350, Jamaica Bay and Rockaway Inlet, 55 ed, 24 June 1995
Chart 12402, New York Lower Bay, Northern Part, 5 ed, 16 Sept 1995

DEPTH *	LATITUDE (NAD 83)	LONGITUDE (NAD 83)
16 ft	40° 32' 15.58" N	073° 56' 48.38" W
19 ft	40° 31' 55.45" N	073° 56' 00.16" W

* Updated depths are reduced to feet at MLLW using predicted tides and should be viewed as preliminary information, subject to office review.

Contact either of the following personnel for further information:

Commanding Officer
NOAA Ship RUDE (917) 833-4279
439 West York Street
Norfolk, VA 23510

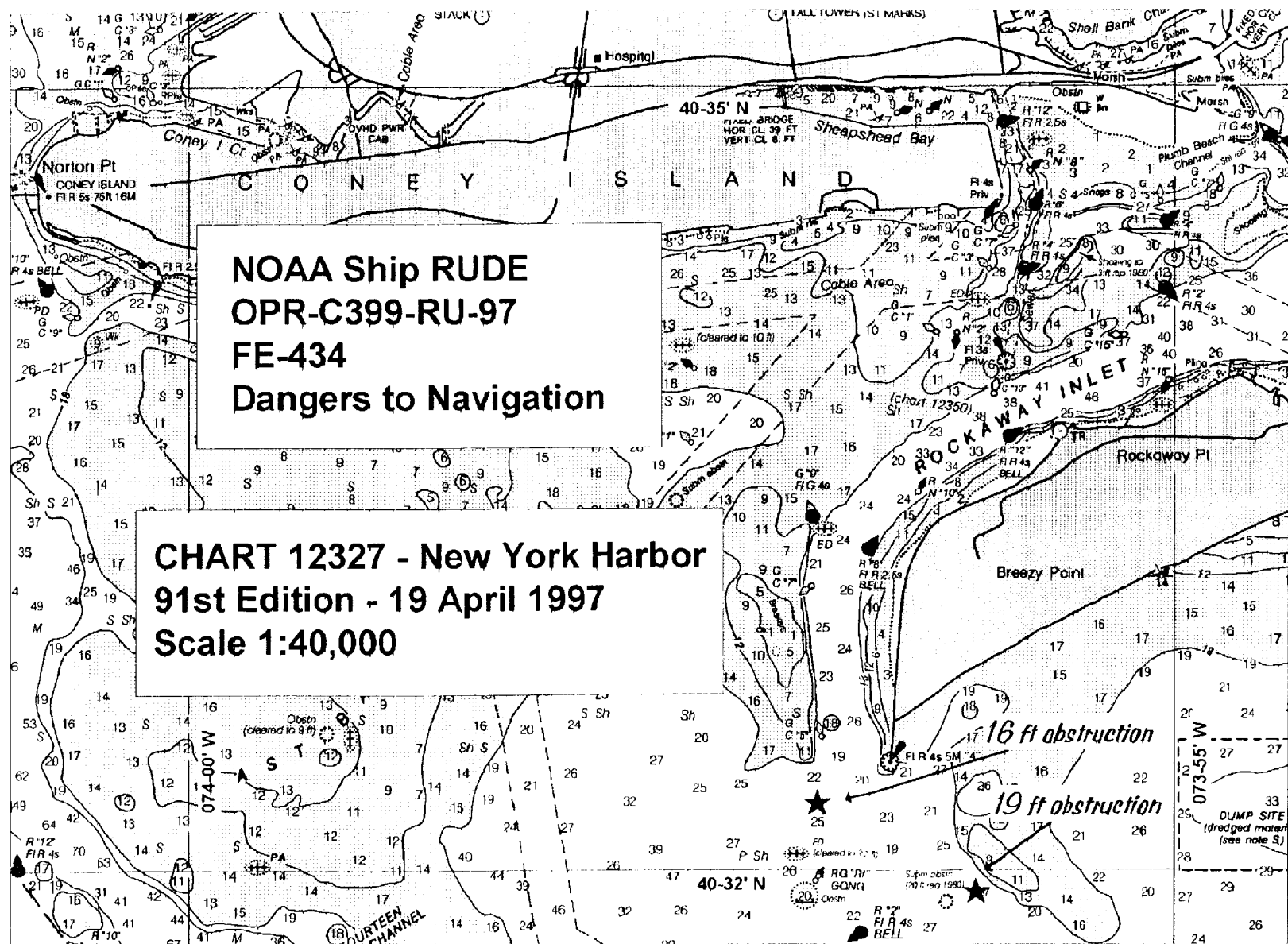
Chief, Atlantic Hydrographic Branch
Atlantic Marine Center (757) 441-6746
439 West York Street
Norfolk, VA 23510

Sincerely,

David A. Cole, LCDR, NOAA
Commanding Officer, NOAA Ship RUDE

cc: AHB, NIMA





**NOAA Ship RUDE
OPR-C399-RU-97
FE-434
Dangers to Navigation**

**CHART 12327 - New York Harbor
91st Edition - 19 April 1997
Scale 1:40,000**

16 ft obstruction

19 ft obstruction



**U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of NOAA Corps Operations
NOAA Ship RUDE S-590
439 W. York Street
Norfolk, VA 23510-1114**

October 15, 1997

Captain Robert Dean
United New York / Sandy Hook Pilots' Benevolent Association
201 Edgewater Street
Staten Island, New York 10305

Dear Captain Dean:

I have enclosed preliminary sounding plots for the hydrographic surveys conducted in the approaches to New York Harbor during 1997. We are currently finalizing our processing and field reports for these surveys. Soundings on all surveys were reduced to Mean Lower Low Water using predicted tides, except on sheet H-10675, which used verified tides. Twelve items of critical interest were submitted as danger to navigation reports.

Please feel free to contact either myself or Commander Perugini if you have any questions regarding these preliminary sounding plots:

Commanding Officer
NOAA Ship RUDE
439 West York Street
Norfolk, VA 23510-1145
(917) 833-4279

Chief, Atlantic Hydrographic Branch
NOAA Atlantic Marine Center
439 West York Street
Norfolk, VA 23510-1145
(757) 441-6746

Sincerely,

David A. Cole, LCDR, NOAA
Commanding Officer, NOAA Ship RUDE

cc: CDR Perugini
Attachment



ATTN: STEVE VERLY
 NOAA 301 213 4533

BRONX QUEEN

Stern

Awois 9707

Ballast

Engines

Bow

Fuel Tan

Hand Railing

Sketch By Dan Lieb
 and Dan Berg

99605

X26968.8

Y43735.1

DAN BERG
 AQUA EXPLORERS, INC.
 980 CHURCH STREET
 BALDWIN, N.Y. 11510
 (516) 668-2658

IF YOU NEED ANY ADDITIONAL
 INFO JUST CALL *DN*

Black Warrior/Bronx Queen

to the NEW YORK TIMES, "Captain Smith manifested the qualities of the cool and skillful." He ordered that all light wood work, furniture and any remaining spars be used as fuel to power her steam engine. His seamanship brought all passengers and crew to safety.

On February 20, 1859, about 9:00 AM, while trying to enter New York harbor in a heavy fog, the captain of the *Black Warrior* ran his ship aground on Rockaway Bar. All passengers, crew and cargo were brought safely to New York by the assisting vessels, Screamer, Achilles and Edwin Blount. At first, she was resting easy and no trouble was anticipated in towing her off. Unfortunately, the *Black Warrior* struck at high tide, and although during the next few days every effort was made to save her, she settled deeper and deeper into the sand. Finally, on February 24, during high tide, she was moved about one hundred feet before grounding again. That same day a gale blew up and the once proud *Black Warrior* was pounded to pieces.

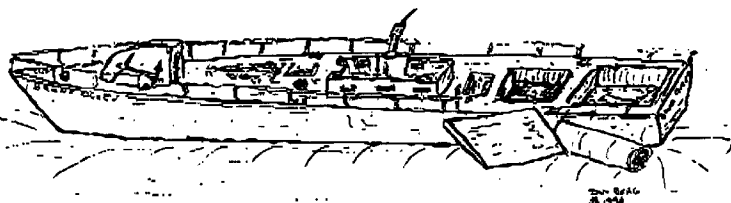
The *Warrior* now rests in 30 to 35 five feet of water. She is all broken up and spread out over a large area. Although most of her brass artifacts have been recovered, lucky divers may still find anything from brass spikes, silverware, and portholes. Take note that the eating utensils found here have the vessel's name engraved on their handles. In the past eight years, we have made many dives on this wreck, and although the site is home to some huge blackfish which would be great for spear fishing, we have always been content to find a spot in the sand and dig for artifacts.

The name *Bronx Queen* can still be on the wrecks bow. Photo by Jozef Koppelman.

BRONX QUEEN

The *Bronx Queen* is the latest addition to *Wreck Valley*. This 110 foot long, wood hulled fishing boat was cruising off Breezy Point on December 20, 1989, when the Captain heard a loud thump. Within 15 minutes the boat had sunk, leaving 19 people floundering in bitter cold water. The Coast Guard responded and was able to retrieve all passengers and crew from the

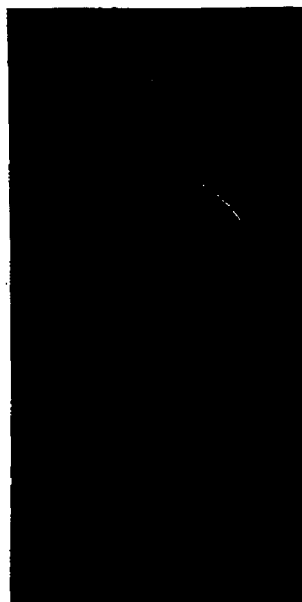
Underwater sketch of the *Bronx Queen*. By Daniel Berg.



22

AQUA EXPLORERS, INC.
980 CHURCH STREET
BALDWIN, N.Y. 11510
(516) 888-2858

SKETCH 100
AFTER SUNK



Bronx Queen/Brunette/Charlemagne Tower

water within two hours. Unfortunately two of the victims died later in the hospital, one from exposure and the other from a heart attack.

The *Bronx Queen* is a converted Submarine Chaser, possibly the SC-635. She was built by Mantis Yacht Building Co, Camden NJ. The SC-635 was launched on October 12, 1942 and commissioned on October 23. She displaced 116 tons and had a top speed of 18 knots.

On January 6, 1990, less than a month after her sinking, we boarded a charter boat on our way to dive this new wreck. I was the first sport diver to descend. I found a virgin shipwreck, portholes, fishing poles, and brass cage lamps were everywhere. We all had a great dive and will surely always remember the excitement of being the first to explore a new wreck.

The *Bronx Queen* is now resting on a sand bottom only a few miles out of Rockaway Inlet in 35 feet of water. She is sitting upright and leaning on her port side. Her pilot house has been torn away and is now sitting in the sand next to the wreck. At the time of this writing, it is uncertain whether this wreck will be left on the bottom, removed or wire dragged clear so her wreckage is not hazardous to shipping.

BRUNETTE

The *Brunette* was built in 1867 by Pusey & Jones Yards, Wilmington, Delaware.

On February 1, 1870, The *Brunette* was en route from New York to Philadelphia with a general cargo. At 10:00 PM she collided with the *Santiago de Cuba*.

Captain George Hoffman found this wreck a few years back. When divers started to dig, they recovered crates of brown and white marble door knobs, pocket knives and bottles. All that is left of her is her prop shaft, coal fired steam engine and boilers. The *Door Knob Wreck*, as she is more commonly known, rests 200 feet away from the *Cadet* in 70 feet of water.

CHARLEMAGNE TOWER

The *Charlemagne Tower* was built in 1888 at Quayle & M Co., Cleveland. She was 255 feet long, 40 feet wide, displaced 1825 gross tons and was owned by Southern Steamship Co.

On March 6, 1914, while en route from Norfolk, Virginia, to Boston, she

24

AQUA EXPLORERS, INC.
980 CHURCH STREET
BALDWIN, N.Y. 11510



Today the *Charlemagne Tower* sits in Collection, University of Baltimore Lib

started to take on water. Capt: the order to abandon ship. lifeboats. One boat with four surf. Captain Simmons and tw for twelve hours in a rough sea against them before they were

Today the *Charlemagne Tower* collapsed and low lying but is

CHAR

This wreck is also known as schooner, launched as the *Millbridge*, Maine, by the W tons, was 224.8 feet long and in an easterly gale and tow renamed *Forest City*. In 1916 her hulk was sold, rebuilt an

On July 22, 1919, on her first to enter New York harbor Richard Crapsey lost his bear



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration,
NATIONAL OCEAN SERVICE
Office of Coast Survey
Silver Spring, Maryland 20910-3282

APR 8 1997

MEMORANDUM FOR: Commander Samuel P. Debow, NOAA
Commanding Officer, NOAA Ship RUDE
FROM: Captain Andrew A. Armstrong, III, NOAA
Chief, Hydrographic Surveys Division
SUBJECT: Multibeam Data Acquisition Interim Guidance -
Sound Velocity Profile (SVP) Casts

The following guidelines are provided to ensure quality multibeam data acquisition:

- 1) RUDE least-depth item investigations using the Seabat 9003 require at least one cast per week. Least depths must fall within $\pm 30^\circ$ of nadir in the multibeam swath.
- 2) Where RUDE is instructed to conduct full-coverage multibeam surveys (e.g. patch tests), at least two SVP casts must be taken each day (i.e. eight hours) of data acquisition. One cast should be taken at day's beginning, and a second cast approximately two hours before day's end.
- 3) Casts need to be taken to depths of least 95% of the maximum depth expected for the survey area.
- 4) The Hydrographer must be aware of local effects which can contribute to changes in salinity and temperature in the survey area. The Hydrographer should decrease swath spacing or increase the frequency of casts when data quality becomes suspect due to sound velocity.

Questions regarding this guidance can be directed to LCDR Gerd Glang, HSD Systems Support Branch, 301-713-2705.



Printed on Recycled Paper



VII GENERAL This section contains information of general concern to the mariner. Mariners are advised to use caution while transiting these areas.

DIARY OF DREDGING / CONSTRUCTION OPERATIONS STILL IN EFFECT

Following is a list of construction and dredging projects still in effect. Mariners are advised to use caution while transiting these areas. The LNM REF column refers to the LNM in which the article first appears and where detailed information may be obtained. The dates listed for completion are tentative. An asterisk in the left margin marks new information.

LOCATION	SUBJECT	COMPLETION DATE	LNM REF
MA - OFF/SHORE - The U.S. Navy advises of daily firing exercises from 6:30 am to 7:30 pm, 14 - 20 April 1997, in an area bounded by the following: 41°02.5N, 70°42W; to 41°07N, 70°22W; to 41°05N, 70°10W 41°00N, 69°55W; to 40°48N, 69°36W; to 40°30N, 69°36W; to 40°30N, 70°42W, thence to beginning. Chart(s): 13003, 13008, 13200 LNM 16/97 (CGD1)			
ME - SOUTH PORTLAND - Installation of submarine cables between the bascule piers of the new Portland - South Portland Bridge began 7 April, 1997 and will continue for about one month. On scene will be a barge with a crane and a clam bucket. Mariners are advised to use caution while transiting the area. Chart(s) 13292 LNM 16/97 (CGD1)			
NY - LOWER BAY - The NOAA Ship RUDE is conducting hydrographic surveys in the Lower Bay and its approaches from April - June 1997. The purpose of the surveys is to update the existing nautical charts of the region. The survey area extends up to 10 nautical miles offshore from Monmouth Beach to Highlands, NJ and in all waters within 5 nautical miles of Sandy Hook. The RUDE is a 90 ft white-hull vessel with a blue NOAA logo on the bow, which will be monitoring channels 13 and 18. During operations the ship tows a side scan sonar approximately 30 yards astern. Mariners are requested to give RUDE a wide berth as the ship often makes erratic maneuvers during survey operations. Chart(s): 12401, 12324 LNM 16/97 (CGD1)			
ENVIRONMENTAL STUDY - Surveys are being conducted until 25 May, 1997 within a 20 mile radius of the following position: 39°55N, 70°40. Meters will be set at the following positions: 39°56N, 70°40W. On scene will be the R/V MAURICE EWING. Mariners are advised to use extreme caution while transiting the area as the vessels ability to maneuver will be limited. LNM 16/97 (CGD1)			
NJ - SANDY HOOK TO BARNEGAT INLET - Dredging will be done along the New Jersey Coast adjacent to the Long Branch Area beginning 16 April 1997 and continuing for about a year and a half. On scene will be a trailing suction hopper dredge #406 "R.N. WEEKS", which will transport material from the offshore borrow site to a near shore location. The mono buoy #370 will then transport the material to the beach placement location. The work will begin from the Northernly limits and proceed south. The hours of operation will be 24 Hours a day, 7 days a week. Mariners are requested to exercise care and reduce speed when transiting the area. Chart(s) 12324 LNM 16/97 (CGD1)			
NY - EAST ROCKAWAY INLET - The following uncharted aids have been reestablished: East Rockaway Inlet Buoy 4 (LLNR 31525) and East Rockaway Inlet Lighted Buoy 6 (LLNR 31535). LNM 16/97 (CGD1)			
MA - NANTUCKET SOUND AND APPROACHES - Dredging is being done in Green Pond, Eel Pond and Great Pond until on or about 24 April 1997. The hours of operation will be Monday - Friday, 7:00 am - 4:00 pm. On scene will be the dredge "COD FISH" and attending tugs, which will be monitoring channels 9, 10 and 18. Mariners are advised to use caution while transiting the area. Chart(s) 13237 LNM 16/97 (CGD1)			
NY - NEW YORK HARBOR - Dredging is being done until approximately 6 June 1997, in the vicinity of National Dry Dock Channel Buoys 2 - 7 (LLNR 37210 - 37230), which were temporarily discontinued for the dredging. Two red anchor balls are in the place of Buoy 2 and Buoy 4. The work is being done 24 hours a day. On scene will be the dredge 51, which will be monitoring channel 7. Mariners are advised to use caution while transiting the area. Chart(s) 12327, 12334, 12335 LNM 16/97 (CGD1)			
NY - UPPER BAY - A sunken anchor has been located within Federal Anchorage 21C, Bayridge Anchorage, in position 40°38.38'N, 074°03.10'W. Mariners are advised to avoid anchoring in this area. Chart(s) 12334 LNM 16/97 (CGD1)			
NY - EAST RIVER - A NO WAKE ZONE is requested under the Queensboro/59th Street Bridge for the safety of the workers on a barge doing construction on the bridge. The NO WAKE ZONE will be in effect until 15 November 1997. Chart(s) 12335 LNM 16/97 (CGD1)			
ME - SCARBOROUGH RIVER - The following uncharted aids have been reestablished: Scarborough River Buoy 7 (LLNR 07910) and Scarborough River Buoy 9 (LLNR 07920), and Scarborough River Buoy 10 (LLNR 07925). LNM 16/97 (CGD1)			

BRIDGE SECTION

BRIDGE	TYPE	WATERWAY	MILE	SUBJECT	REF/LNM
Million Dollar	B	Fore River	1.5	Bridge Construction	06-96
Route 1A	SW	Danvers River	0.0	New Bridge Construction	19-96
Craig Br.	B	Charles River	1.0	Bridge Closure	15-97
Main Street	F	Powwow River	0.1	Bridge Construction	07-97
Route 53	F	North River	12.0	Bridge Construction	07-97
Old Providence Rd.	F	Palmer River	0.7	Bridge Replacement	07-97
Route 114	F	Barrington River	0.4	Temp. Bridge Construction	07-97
Pequonnock Railroad	B	Pequonnock River	0.3	Bridge Replacement	07-97
Quinnipiac Street	B	Pequonnock River	0.4	Marine Information	07-97
Madam M. Haddam	SW	Connecticut River	16.8	Bridge Repairs	09-97
Founders	F	Connecticut River	51.7	Bridge Rehabilitation	07-97
Tomlinson	B	Quinnipiac River	0.0	Marine Information	07-97
Stratford Ave.	B	Yellow Mill Channel	0.3	Horz. Clear. Reduction	11-97
Route 29	F	Champlain Canal	NA	Horz. Clear Reduction	21-96
Route 9	F	Erie Canal	4.3	Bridge Rehabilitation	06-96

APPENDIX VII

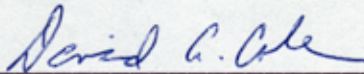
APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. FE-434

Field operations contributing to the accomplishment of this Field Examination survey were conducted under my direct supervision with frequent personal checks of progress and adequacy. All field sheets and reports were reviewed in their entirety and all supporting records were checked as well.

This survey was completed with 200% side scan sonar coverage and is adequate to supersede all prior surveys in common areas. The survey is considered complete and adequate for nautical charting. Further work is recommended for AWOIS 9707, as indicated in Section T.3.



David A. Cole, LCDR, NOAA
Commanding Officer
NOAA Ship RUDE



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: September 25, 1997

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR C399-RU

HYDROGRAPHIC SHEET: FE-434

LOCALITY: Approaches to New York Harbor, N.Y.

TIME PERIOD: June 20, - July 2, 1997

TIDE STATION USED: 853-1680 Sandy Hook, N.J.
Lat. 40° 28.0'N Lon. 74° 00.6'W

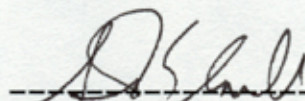
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 m
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.481 m

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SH1, SH2 & SH9

Refer to attachment(s) for zoning information.

Note: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time.



CHIEF, TIDAL ANALYSIS BRANCH



GEOGRAPHIC NAMES

FE-434

Name on Survey	1980 CHART NO. 12402, 12527									
	A	B	C	D	E	F	G	H	K	
	ON PREVIOUS SURVEY	CON U.S. QUADRANGLE MAPS	FROM LOCAL INFORMATION	ON LOCAL MAPS	P.O. GUIDE OR MAP	GRAND McNALLY ATLAS	U.S. LIGHT LIST			
AMBROSE CHANNEL	X	X							1	
CHAPEL HILL NORTH CHANNEL	X	X							2	
LOWER BAY	X	X							3	
NEW YORK (title)	X	X							4	
ROCKAWAY INLET	X	X							5	
									6	
									7	
									8	
									9	
									10	
									11	
									12	
									13	
									14	
									15	
									16	
									17	
									18	
									19	
									20	
									21	
									22	
									23	
									24	
									25	

Approved

Dennis J. Rosenberg
Chief Geographer

MAY 7 1998

12/14/98

HYDROGRAPHIC SURVEY STATISTICS
REGISTRY NUMBER: F00434

NUMBER OF CONTROL STATIONS	2
NUMBER OF POSITIONS	5902
NUMBER OF SOUNDINGS	5902

	TIME-HOURS	DATE COMPLETED
PREPROCESSING EXAMINATION	73	04/17/98
VERIFICATION OF FIELD DATA	116	10/19/98
EVALUATION AND ANALYSIS	78	
FINAL INSPECTION	49.50	11/20/98
COMPILATION	49	12/04/98
TOTAL TIME	369	
ATLANTIC HYDROGRAPHIC BRANCH APPROVAL		11/30/98

N/CS 33-107-98

LETTER TRANSMITTING DATA

TO:

NOAA / National Ocean Service
Chief, Data Control Group, N/CS3x1
SSMC3, Station 6100
1315 East-West Hwy.
Silver Spring, MD 20910-3282

DATA AS LISTED BELOW WERE FORWARDED TO YOU BY
(Check).

☐ ORDINARY MAIL ☐ AIR MAIL
☐ REGISTERED MAIL ☒ EXPRESS
☐ GBL (Give number)

DATE FORWARDED

12-14-98

NUMBER OF PACKAGES

ONE TUBE

NOTE: A separate transmittal letter is to be used for each type of data, as tidal data, seismology, geomagnetism, etc. State the number of packages and include an executed copy of the transmittal letter in each package. In addition the original and one copy of the letter should be sent under separate cover. The copy will be returned as a receipt. This form should not be used for correspondence or transmitting accounting documents.

F00434 OPR-C399-RU-97

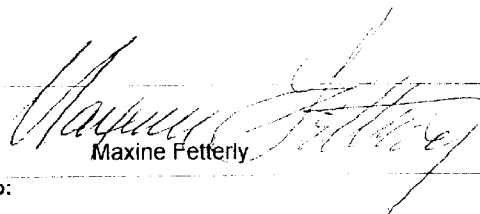
New York, Lower Bay
Vicinity of Rockaway Inlet

1 Descriptive Report w/Smooth Sheets attached
3 Drawing History forms 76-71 for NOS Charts 12402, 12350 & 12327

1 Mylar H-Drawing for NOS Chart 12402
1 Mylar H-Drawing for NOS Chart 12350
1 Mylar H-Drawing for NOS Chart 12327

1 Paper Composite Plot for NOS Chart 12402
1 Paper Composite Plot for NOS Chart 12350
1 Paper Composite Plot for NOS Chart 12327

FROM: (Signature)


Maxine Fetterly

RECEIVED THE ABOVE
(Name, Division, Date)

Return receipted copy to:

Maxine Fetterly
Atlantic Hydrographic Branch
439 W. York St.
Norfolk, VA 23510

**ATLANTIC HYDROGRAPHIC SECTION
EVALUATION REPORT FOR F00434 (1997)**

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

D. AUTOMATED DATA ACQUISITION AND PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

Hydrographic Processing System
MicroStation 95, version 5.05
SiteWorks, version 2.1
NADCON, version 2.10
I/RAS B, version 5.01

The smooth sheet was plotted using a Hewlett Packard DesignJet 2500CP plotter.

H. CONTROL STATIONS

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD 83). The smooth sheet has been annotated with ticks showing the computed mean shift between the NAD 83 and the North American Datum of 1927 (NAD 27).

To place this survey on the NAD 27 datum, move the projection lines 0.381 seconds (11.76 meters or 1.18 mm at the scale of the survey) north in latitude and 1.501 seconds (35.31 meters or 3.53 mm at the scale of the survey) east in longitude.

All geographic positions listed in this report are on the NAD 83 unless stated otherwise.

L. JUNCTIONS

This survey does not junction with any contemporary surveys.

Present survey depths are in harmony with the charted

hydrography.

M. COMPARISON WITH PRIOR SURVEYS

A comparison with prior surveys was not done during office processing in accordance with section 4. of the memorandum titled *Changes to Hydrographic Survey Processing*, dated May 24, 1995 and CDR. Nicholas Perugini's e-mail (re: SeaBat Coverage and Prior Survey Comparison) of March 23, 1998. However, in the vicinity of Latitude 40°30'25"N, Longitude 73°56'10"W (sheet 4 of 4), the requirement for 100% multi-beam coverage or 200% side scan sonar coverage was not met. Comparisons were made in this area with the prior surveys listed below.

H09820	(1980)	1:10,000
<u>H10035</u>	<u>(1982)</u>	<u>1:10,000</u>

H09820 (1980) covers a portion of the present survey in the vicinity of Latitude 40°30'45"N, Longitude 73°56'15"W (Sheet 4 of 4). Prior survey depths vary ± 1 to 2 feet from present survey depths.

H10035 (1982) covers a portion of the present survey in the vicinity of Latitude 40°30'20"N, Longitude 73°56'15"W (Sheet 4 of 4). Prior survey depths vary ± 1 to 2 feet from present survey depths. The following charted depths originate with prior survey H10035 (1982):

<u>Depth</u> <u>(ft/m)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
24/7 ³	40°30'16"	73°56'41"
25/7 ⁶	40°30'21"	73°56'26"
29/8 ⁸	40°30'13"	73°56'18"
27/8 ²	40°30'11"	73°56'32"
30/9 ¹	40°30'36"	73°56'13"
25/7 ⁶	40°30'29"	73°56'23"

It is recommended that these depths be retained as charted.

Differences between the present and prior surveys can be

attributed to natural changes in the bottom configuration, cultural change, and/or improved hydrographic surveying equipment and methods.

The present survey is considered adequate to supersede the prior surveys within the common area, except as noted in this report.

N. ITEM INVESTIGATIONS

1. AWOIS Item #9708, a charted 30 ft Obstrn with the notation Rks Rep 1994, in Latitude 40°32'22"N, Longitude 74°02'17"W, originates with Chart Letter 1219 of 1994 (CL1219/94). This feature was investigated by the field unit using side scan sonar and SeaBat. The following obstructions were located:

<u>Depth</u> <u>(ft/m)</u>	<u>Latitude (N)</u>	<u>Longitude (W)</u>
22/6 ⁸	40°32'27.03"	74°02'22.83"
27/8 ²	40°32'24.32"	74°02'11.47"
27/8 ³	40°32'16.49"	74°02'13.34"

It is recommended that the charted 30 ft Obstrn with the notation Rks Rep 1994 be removed from the chart and the above obstructions be charted as shown on the present survey.

O. COMPARISON WITH CHARTS 12326 (44th Edition, Feb. 1/97)
12327 (91st Edition, Apr. 19/97)
12350 (55th Edition, Jun. 24/95)
12402 (6th Edition, Nov. 8/97)

1. Hydrography

The charted hydrography within the common area originates with prior surveys and miscellaneous sources and requires no further consideration. Present survey soundings agree within ± 1 to 3 feet of charted depths. The hydrographer makes adequate comparisons in section N. and O. of the Descriptive Report. Attention is directed to the following:

a. A charted note Shoaling 28 ft rep 1993 PA, in the vicinity of Latitude 40°32'25"N, Longitude 74°02'18"W, on chart 12402, originates with LNM 41/93. Present survey depths in the area range from 28 to 32 feet (8⁵-9⁷ m). The controlling depth for the Chapel Hill North Channel, is 27 feet. It is recommended that the note be removed from the chart and present survey depths be charted.

b. A charted obstruction with a depth of 19 feet (6 m), in Latitude 40°31'55.52"N, Longitude 73°56'00.20"W, originates with a Danger to Navigation Report from the NOAA Ship RUDE, dated September 30, 1997, which was published in LNM 42 of 97 (LNM 42/97), dated October 15, 1997 on chart 12327 (92nd Edition, December 20, 1997). It is recommended that the obstruction be retained as presently charted. It is also recommended that an obstruction with a depth of 19 feet (6 m) be added to chart 12350 as shown on the present survey.

c. An uncharted obstruction with a depth of 19 feet (6 m), in Latitude 40°32'07.94"N, Longitude 73°56'27.34"W, was located by the field unit using side scan sonar and SeaBat. It is recommended that the feature be charted as shown on the present survey.

d. The following charted depths originate with unascertainable sources on charts 12327 and 12402. The field unit did not meet the required 200% side scan sonar or SeaBat coverage in this area.

Depth (ft/m)	Latitude (N)	Longitude (W)
31/9 ⁴	40°30'07"	73°56'15"
33/10	40°30'04"	73°56'07"

It is recommended that the above depths be retained as charted.

The present survey is adequate to supersede the charted hydrography in the common area, except as noted in this report.

2. Controlling Depths

There are no conflicts between the present survey depths and the controlling depths of Chapel Hill North Channel.

P. ADEQUACY OF SURVEY

This is an adequate hydrographic survey and should supersede all prior surveys within the common area with the exception of those items noted above.

S. MISCELLANEOUS

Chart compilation using the present survey data was done by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compiled data will be forwarded to Hydrographic Survey Division, Silver Spring, Maryland upon completion of the project.

The following NOS Charts were used for compilation of the present survey:

12327	(92 nd Edition, Dec. 20/97)
12350	(55 th Edition, Jun. 24/95)
12402	(6 th Edition, Nov. 08/97)

74° 02' 30"

74° 02' 00"

74° 01' 30"

40° 35' 00"

74° 02' 00" W

NAD 27

40° 35' 00" N

40° 35' 00"

CHECKED BY: MLS
4/23/1998

LOWER BAY

F00434
NEW YORK
LOWER BAY
VICINITY OF ROCKAWAY INLET
JUNE 20, 1997 - JULY 2, 1997
SCALE: 1:10,000
SOUNDINGS IN FEET AT MLLW
SHEET 1 OF 4
AWOIS NO. 744

40° 34' 30"

40° 34' 30"

60 60 (61) 60
59 59 59 59 60 59 58
58 57 57 58 59 59 59 58 58
56 57 57 57 58 58 57 58 58
54 57 57 57 57 58 58 57 57
55 54 55 56 56 56 57 57 56
55 57 55 55 56 57 56 55
54 55 56 51 Obstr 55 54
54 55 55 54 55 55 55 55 54
54 55 55 54 54 54 55 55 54
54 53 54 52 53 54
54 54 53 49 Obstr 51
54 51 51

AMBROSE CHANNEL

40° 34' 00"

40° 34' 00"

74° 02' 30"

74° 02' 00"

74° 01' 30"

74° 03' 00"

74° 02' 30"

74° 02' 00"

40° 33' 00"

74° 02' 30" W

NAD 27 40° 33' 00" N

40° 33' 00"

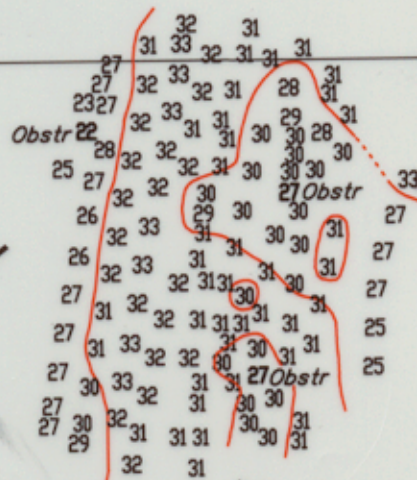
CHECKED BY: MLS
4/23/1998

F00434
NEW YORK
LOWER BAY
VICINITY OF ROCKAWAY INLET
JUNE 20, 1997 - JULY 2, 1997
SCALE: 1:10,000
SOUNDINGS IN FEET AT MLLW
SHEET 2 OF 4
AWOIS NO. 9708

40° 32' 30"

40° 32' 30"

LOWER BAY

CHapel Hill
North Channel

40° 32' 00"

40° 32' 00"

74° 03' 00"

74° 02' 30"

74° 02' 00"

73° 57' 30"
40° 31' 00"

73° 57' 00"

73° 56' 30"

73° 56' 00"

40° 32' 30"

ROCKAWAY INLET

24 23 23
27 25 26 26 23 24 24 22 26 27 26 27 27 27
27 27 28 28 28 27 28 29 27 28 28 29 28 28 28
28 28 28 28 29 28 29 27 28 28 29 28 28 28
28 27 28 28 28 29 28 29 27 28 28 29 28 28 28
28 29 29 29 29 29 29 29 25 30 24 27 28 27 28 28 28
28 29 29 29 26 29 30 29 28 28 24 29 29 29 28 29 28
29 29 29 30 30 29 28 29 29 29 29 30 24 27 29 29
29 29 30 30 30 29 29 29 29 29 29 30 24 27 29 29
29 28 28 29 30 30 30 29 29 29 29 29 29 29 29 29 29
28 26 29 29 30 29 30 27 29 29 29 29 30 30 29 29 26 28 28 25 27
28 28 28 28 29 29 26 29 29 29 29 29 30 30 29 29 28 27 28 28 27
28 28 28 28 28 28 29 28 28 27 28 28 27 27 26 26 26
27 27 27 28 28 26 28 28 28 28 28 28 29 26 28 27 27 27 26 26 26
28 28 27 27 28 28 26 28 28 29 28 28 28 29 26 28 27 24 27 26 26 26
28 27 27 27 28 27 28 28 28 28 27 27 27 27 26 26 26 26 26 26
26 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27 27
26 27 26 26 24 26 23 26 25 26 26 27 27 27 27 26 26 26 26 26
26 27 26 26 22 25 26 27 26 26 26 27 27 27 27 27 26 26 26
26 26 26 26 25 26 26 26 26 25 26 26 26 26 26 26 26 26
25 25 25 25 25 24 25 25 25 25 25 25 25 25 25 25 25 25
25 26 26 23 25 26 25 25 24 26 26 26 26 26 26 26 26 26
25 23 23 25 25 25 26 26 25 25 25 25 25 25 25 25 25 25
25 25 26 26 25 25 25 25 25 25 25 25 25 25 25 25 25 25
25 25 26 26

23 28 26 26 25 24 22 21 20 19
27 28 29 28 27 26 25 24 23 22 21 20 19
28 28 28 28 29 26 25 24 23 22 21 20 19
28
27 27 26 28 24 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20
27 27 26 28 24 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20
27 27 26 28 24 28 29 20 20 20 20 20 20 20 20 20 20 20 20 20
26 27 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28
26 26 27 28 29 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28
28 28 29 25 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28 28
29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29 29

40° 32' 00"

LOWER BAY

F00434
NEW YORK
LOWER BAY
VICINITY OF ROCKAWAY INLET
JUNE 20, 1997 - JULY 2, 1997
SCALE: 1:10,000
SOUNDINGS IN FEET AT MLLW
SHEET 3 OF 4
AWOIS NO. 1647,2696,2698

40° 31' 30"

73° 57' 00"W

NAD 27 40° 31' 30"N

73° 57' 30"

CHECKED BY: MLS
4/23/1998

73° 56' 30"

73° 56' 00"

40° 31' 30"

73° 56' 30"

73° 56' 00"

40° 31' 00"

73° 56' 30" W
NAD 27

40° 31' 00" N

CHECKED BY: MLS
4/23/1998

LOWER BAY

FO0434
NEW YORK
LOWER BAY
VICINITY OF ROCKAWAY INLET
JUNE 20, 1997 - JULY 2, 1997
SCALE: 1:10,000
SOUNDINGS IN FEET AT MLLW
SHEET 4 OF 4
AWOIS NO. 9707
*Detached soundings:
in red from H10035 (1982)*

40° 30' 30"

40° 30' 30"

40° 30' 00"

40° 30' 00"

AMBROSE CHANNEL

73° 56' 30"

73° 56' 00"

F00434

Marilyn Schlüter

Marilyn L. Schlüter

Cartographic Technician

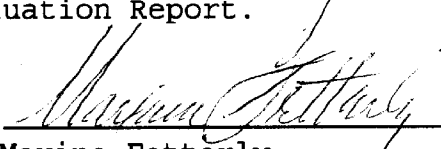
Verification of Field Data

Evaluation and Analysis

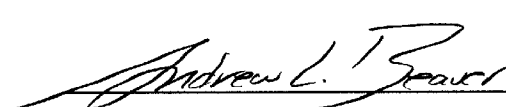
APPROVAL SHEET
F00434

Initial Approvals:

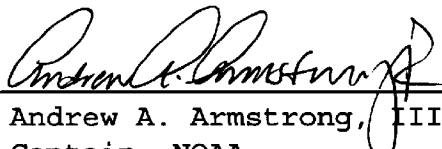
The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproof of charted data. The digital data have been completed and all revisions and additions made to the smooth sheet during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

 Date: 11/19/98
Maxine Fetterly
Cartographer
Atlantic Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

 Date: 11/30/98
Andrew L. Beaver
Lieutenant Commander, NOAA
Chief, Atlantic Hydrographic Branch

Final Approval:

Approved:  Date: Jan 20, 1999
Andrew A. Armstrong, III
Captain, NOAA
Chief, Hydrographic Surveys Division

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. F00434

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.

1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

SUPERSEDES C&GS FORM 8052 WHICH MAY BE USED